ABSTRACT

A device to implant impurities into a semiconductor wafer has a process chamber having a wall, a pressure compensation unit, a disk to support a plurality of semiconductor wafers within the process chamber. The disk has a radialy extending slot arranged among the wafers. A beam gun is positioned within the process chamber to shoot an ion beam at the semiconductor wafers. A cryo pump minimizes the pressure within the process chamber. A first ion gauge is positioned between the process chamber and the cryo pump. A second ion gauge extends through the wall of the process chamber. A switching device selectively connects the first or second ion gauge to the pressure compensation unit. A faraday receives ions from the ion gun after the ions travel through the slot in the disk. A current meter counts the number of electrons flowing to the disk faraday to neutralize the ions.